

## Datasheet

Subject to technical alteration  
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## » APPLICATION

The surface-mounted sensor measures relative humidity and temperature of air and non-aggressive indoor gases. Moisture detection makes it possible to achieve a pleasant indoor climate and prevent mold. The accuracy of the humidity sensor is 2%. The device can be mounted directly on the wall, on a flush-mounted box or in conjunction with a surface-mounted frame available as an accessory. Predetermined breaking points for surface-mounted installations are available.

## » SECURITY ADVICE – CAUTION



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

## » NOTES ON DISPOSAL



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

## » REMARKS TO ROOM SENSORS

### Location and Accuracy of Room Sensors

The room sensor should be mounted in a suitable location for measuring accurate room temperature. The accuracy of the temperature measurement also depends directly on the temperature dynamics of the wall. It is important, that the back plate is completely flush to the wall so that the circulation of air occurs through the vents in the cover. Otherwise, deviations in temperature measurement will occur due to uncontrolled air circulation. Also the temperature sensor should not be covered by furniture or similar devices. Mounting next to doors (due to draught) or windows (due to colder outside wall) should be avoided.

The temperature dynamics of the wall will influence the temperature measurement. Various wall types (brick, concrete, dividing and hollow brickwork) all have different behaviours with regards to thermal variations.

### Surface and Flush Mounting

The temperature dynamics of the wall influence the measurement result of the sensor. Various wall types (brick, concrete, dividing and hollow brickwork) have different behaviours with regard to thermal variations. A solid concrete wall responds to thermal fluctuations within a room in a much slower way than a light-weight structure wall. Room temperature sensors installed in flush boxes have a longer response time to thermal variations. In extreme cases they detect the radiant heat of the wall even if the air temperature in the room is lower for example. The quicker the dynamics of the wall (temperature acceptance of the wall) or the longer the selected inquiry interval of the temperature sensor is the smaller the deviations limited in time are.

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## » BUILD-UP OF SELF-HEATING BY ELECTRICAL DISSIPATIVE POWER

Temperature sensors with electronic components always have a dissipative power, which affects the temperature measurement of the ambient air. The dissipation in active temperature sensors shows a linear increase with rising operating voltage. This dissipative power has to be considered when measuring temperature. In case of a fixed operating voltage ( $\pm 0,2$  V) this is normally done by adding or reducing a constant offset value. As Thermokon transducers work with a variable operating voltage, only one operating voltage can be taken into consideration, for reasons of production engineering. Transducers 0..10 V / 4..20 mA have a standard setting at an operating voltage of 24 V =. That means, that at this voltage, the expected measuring error of the output signal will be the least. For other operating voltages, the offset error will be increased by a changing power loss of the sensor electronics. If a re-calibration should become necessary later directly on the sensor, this can be done by means of a trimming potentiometer on the sensor board.

**Remark: Occurring draft leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.**

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## » APPLICATION NOTICE FOR HUMIDITY SENSORS

**Refrain from touching the sensitive humidity sensor/element. Touching the sensitive surface will void warranty.**

For standard environmental conditions re-calibration is recommended once a year to maintain the specified accuracy.

When exposed to high ambient temperature and/or high levels of humidity or presence of aggressive gases (i.e. chlorine, ozone, ammonia) the sensor element may be affected and re-calibration may be required sooner than specified. Re-calibration and deterioration of the humidity sensor due to environmental conditions are not subject of the general warranty.

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## » PRODUCT TESTING AND CERTIFICATION



### Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

## » TECHNICAL DATA

Measuring values	temperature, humidity
Network technology	KNX TP
Power supply	Supply via BUS
Measuring range temperature	-55..+125 °C..+50 °C
Measuring range humidity	0..100% rH non-condensing
Accuracy temperature	±0,5 K (typ. at 21 °C)
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	Terminal block, max. 1,5 mm <sup>2</sup>
Ambient condition	-20..+60 °C, max. 85% rH non-condensing
Mounting	surface mounted on flush-mounting box (Ø=60 mm), or to be mounted flat onto the surface using screws, with frame for surface mounting (accessory) or directly on the wall, base part can be mounted and wired separately
Notes	special painting available on request, enclosure stainless steel available, labelling and operating elements on request, other sensors on request

## » CONNECTION

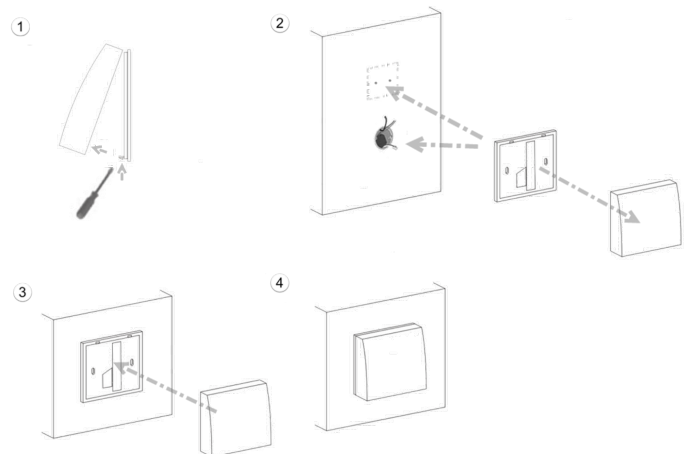
The connection of the device with the KNX bus is established by using a bus terminal. When connecting via the bus terminal, pay attention to the correct polarity corresponding to the imprint. Power is supplied via the internal KNX bus terminal.

## » MOUNTING ADVICES

The device may be installed in a voltage free condition only.

The device can be installed on a flush-mounted box or directly onto the wall.

If installed on a flush-mounted box, seal the pipe to eliminate drafts



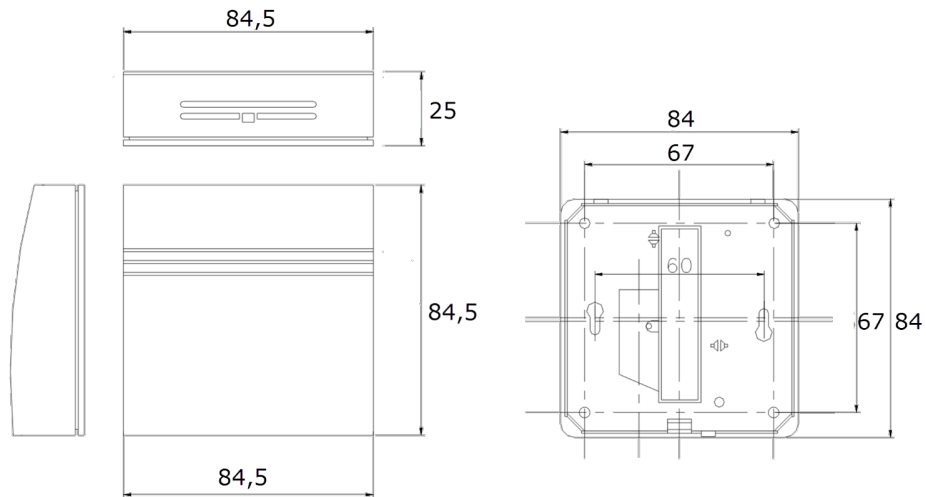
## » COMMISSIONING

In delivery state no device or group addresses are available. The required functions may be released in the parameter settings.

### Important

- configuration with ETS 3.0b and later
- product database not older since 05/2006
- the latest service patch must be installed

The application may only be transferred completely, never partially, into the device, as otherwise malfunctions may occur.

**» DIMENSIONS (MM)****» ACCESSORIES (OPTIONAL)**

Raw plugs and screws (2 pcs. each)  
Frame for surface mounting WRF04

Item No. 102209  
Item No. 111584